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Patent

Amendments to the Specification:

Please replace paragraphs [0007], [0023], [0024], [0025], [0028], [0029], [0031], [0032], and [0034] with the following amended paragraphs:

[0007] The foregoing needs are met, to a great extent, by the present invention, wherein in one aspect an apparatus is provided that in some embodiments ~~discloses~~ disables combustion in an appliance whenever the combustion door is opened. In some embodiments, the electronic ignition is put in a disabled condition so it is not able to provide a spark to ignite fuel in the combustion chamber whenever the combustion door is open.

[0023] According to some embodiments of the invention, the latching bar 18 attaches to the housing 16 via a retaining bracket 20. One end 22 of the latching bar 18 is seated within the retaining bracket 20. The retaining bracket 20 has a floor portion 24 for the end 22 of the latching bar 18 to rest on when the latching bar 18 is in place. The other end 26 of the latching bar 18 is fitted with an inline electrical interlock 28 which may also be referred to in this document as a plug 28. The plug or inline interlock device 28 terminates a wire harness, preferably having [[4]] four wires, but not limited to [[4]] four wires. The wires are contained in a flexible conduit 30.

[0024] The latch bar 18 attaches to the plug 28 rather than the flexible conduit 30. Attaching the latch bar 18 to the plug 28 rather than the conduit 30 ~~avoids~~ reduces the strain the conduit 30 ~~from experiencing strain experiences~~ when the latch bar 18 is removed from the device 10.

[0025] According to some embodiments of the current invention, the plug 28 is a MOLEX® plug (shown in FIGS. 3 and 4 and explained in detail below.) Other embodiments of

the invention may include the use of other suitable type plugs. The use of a [[M]]MOLEX® plug is meant to be exemplary. The plug 28 is configured to mate with the second inline interlock device or plug 32 mounted on the housing 16 on the appliance 10. According to some embodiments of the invention, the bar 18 is supported at one end 26 by the connection made when the plug 28 is mated with the plug 32. The other end 22 the bar 18 is supported by the floor 24 of the retaining bracket 20. Other embodiments include supporting both ends of the bar with retaining brackets or by other means well known in the art.

[0028] In some embodiments of the invention, a handle 40 is attached to the latching bar 18 to provide an easy means for grabbing and moving the latching bar 18. In some embodiments of the invention the latching bar 18 has insulation 19 attached to it on the side of the latching bar 18 that contacts the combustion door 14 in order to reduce an amount of heat that the latching bar 18 absorbs by contacting the combustion door 14. In some embodiments of the invention, the latching bar 18 has insulation 29 surrounding the plug 28 in order to provide electrical insulation between the plug 28 and the latching bar 18.

[0029] As shown in FIGS. 1 and 2, the burner door 14 has a wide portion 42 and a narrow portion 44. The latching bar 18 is configured to fit across the narrow portion 44. However, this embodiment is meant to be illustrative only and not limiting to the invention. Other embodiments of the invention may include a rounded or contoured door 14. The latching bar 18 may be rounded or contoured in order to ~~compliment~~ complement the profile of the burner door 14. Not all embodiments of the invention will include the use of variable contoured doors.

[0031] Extending from the housing 52 are four prongs 48 and 50. The outer prongs 50 have a flat spot 56 which acts as a key when inserted in the corresponding female receiving plug 58 (shown in FIG. 4). The ~~inter~~ inner two prongs 48 are round prongs. Within the prongs 48 and 50 are male electrical connections 60 made of a conductive metal. The connections 60 electrically communicate with corresponding wires contained within the conduit 30 or 38.

Attached to the housing 46 is latching structure [[52]] 62. Latching structure 62 is attached to the outer edges of the housing 52 and is flexible and latches to corresponding structure 64 on the female plug 58 shown in FIG. 4.

[0032] The female plug 58 shown in FIG. 4 has a housing 66. The housing 66 attaches to the flexible conduit 30 or 38 (shown in FIG. 1) and the connection between the conduit 30 or 38 and plug 58 is surrounded by an insulating sleeve 68. Extended from the housing 66 are four prongs 70 and 72 configured to mate with the male prongs 46 and 48. The outer two prongs 70 have a flat spot 74 on the bottom which correspond to the flat spots 56 on the male plug 46. The inner two prongs 72 are configured to mate with the male prongs 48. Within the prongs 70 and 72 are electrical connections 76. The electrical connections 76 may be configured to mate and electrically communicate with corresponding male electrical connections 60. The prongs 48 and 50 of the male plug 46 will slide inside the receiving prongs 72 and 74 of the female plug 58.

[0034] The configuration of the appliance as shown in the [[FIGS.]] drawings is meant to be exemplary only and not limiting. The location of and particular attaching arraignment for the latching bar 18 can be varied according to the needs and circumstances to which the latching bar 18 will be used. Although the integrated latching bar 18 and electrical connection is shown and described as associated with latching a combustion door shut on an combusting appliance, it will be appreciated that the integrated latching bar 18 and plug can be used in other circumstances. The integrated latching bar 18 can be used anytime it is desired to secure something closed and also provide an electrical connection. For example, it could be used as part of a security system. When the latching bar 18 is removed to provide access to open a window or door, the electrical connection is broken thus alerting the electronic the security system that the latching bar is no longer in a securing position. In sum, the invention may be used in a variety of applications and industries not particularly associated with combustion devices.